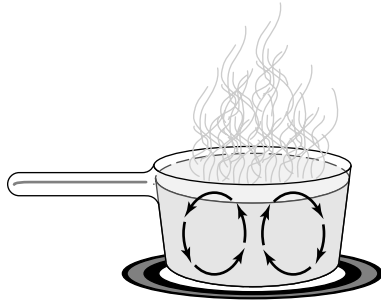


Plate Tectonics ▪ *Review and Reinforce*

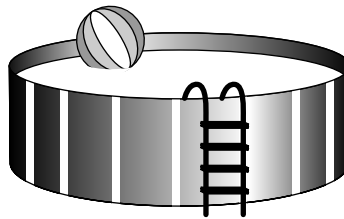
Convection and the Mantle

Understanding Main Ideas

Label each figure by writing the type of heat transfer it shows.



1. _____



2. _____



3. _____

Answer the following questions in the spaces provided.

4. What are convection currents and what causes them?

5. What causes convection currents in Earth's mantle?

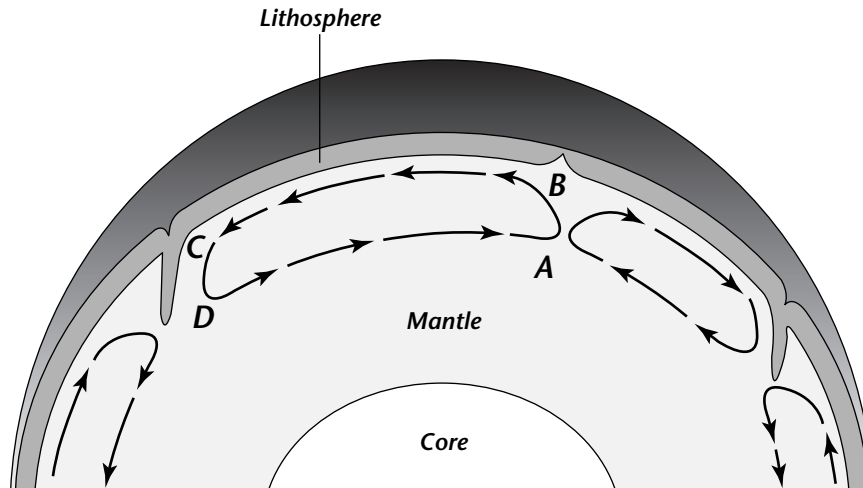
Building Vocabulary

If the statement is true, write true. If it is false, change the underlined word or words to make the statement true.

- _____ 6. The transfer of energy through empty space is called convection.
- _____ 7. The movement of energy from a warmer object to a cooler object is called heat transfer.
- _____ 8. Conduction is heat transfer by direct contact of particles of matter.
- _____ 9. Radiation is the transfer of heat by the movement of a heated fluid.
- _____ 10. Density is a measure of how much heat there is in a volume of a substance.

What's Happening During Convection?

The figure below shows a convection cell in Earth's mantle. A **convection cell** is one complete loop of a convection current. Use the figure to answer the questions that follow.



Answer the following questions on a separate sheet of paper.

1. Where does the heat come from that drives this convection current in the mantle?
2. Where is the temperature of the mantle material greater, at point A or point B? Explain why.
3. Where is the density of the material greater, at point B or point C? Explain why.
4. What causes the convection cell to turn to the left at point B?
5. What happens to the temperature and density of the material between points B and C?
6. What force causes the convection cell to turn down at point C?
7. What happens to the temperature and density of the material between points D and A?
8. What causes the convection cell to turn up at point A?
9. How do you think this convection cell might affect the crust material above it?